



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

October 29, 2019

Annette M. Bloomberg
Regulatory Affairs Manager
Bayer CropScience
P.O. Box 12014
2 TW Alexander Drive
RTP, NC 27709

Subject: Registration Review Label Mitigation for Sulfometuron-methyl and
Chlorsulfuron
Product Name: LANDMARK XP HERBICIDE
EPA Registration Number: 432-1560
Application Date: 11/09/2017
Decision Number: 545085

Dear Ms. Bloomberg:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all of the information submitted with your application to support the Registration Review of the above referenced product in connection with the Sulfonylurea (SU) Herbicides Interim Decision, and has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.


Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

A copy of your label stamped "Accepted" is enclosed. Products shipped after 12 months from the date of this amendment must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6.

Page 2 of 2
EPA Reg. No. 432-1560
Decision No. 545085

If you have any questions about this letter, please contact Erik Kraft by phone at 703-308-9358, or via email at Kraft.Erik@epa.gov.

Sincerely,

A handwritten signature in dark ink, appearing to read "Erik Kraft", with a stylized flourish at the end.

Erik Kraft, Product Manager 24
Fungicide and Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

Enclosure

SULFOMETURON-METHYL
CHLORSULFURON

GROUP

2

HERBICIDE

LANDMARK[®] XP HERBICIDE

Dispersible Granules

Active Ingredient	By Weight
Sulfometuron-methyl {Methyl 2-[[[(4,6-dimethyl-2-pyrimidinyl)amino]-carbonyl]amino]sulfonyl]benzoate}	50%
Chlorsulfuron 2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]benzenesulfonamide	25%

Other Ingredients 25%

Total 100%

EPA Reg. No. 432-1560

EPA Est. No. _____

Nonrefillable Container

Net: _____

OR

Refillable Container

Net: _____

ACCEPTED

10/29/2019

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under

EPA Reg. No. 432-1560

KEEP OUT OF REACH OF CHILDREN

CAUTION

See [Back][Side] Panel for First Aid Instructions and [Leaflet][Booklet] for Complete Precautionary Statements and Directions for Use. (Note to reviewer: Location of additional precautionary statements, directions for use will vary between those listed, depending on container type/size.)

FIRST AID

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. **DO NOT** induce vomiting unless told to do so by a poison control center or doctor. **DO NOT** give anything by mouth to an unconscious person.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.

Have the product container label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-334-7577 for emergency medical treatment information

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION!

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All mixers, loaders, applicators and other handlers must wear:

Long-sleeved shirt and long pants

Shoes plus socks

Chemical resistant gloves made of any waterproof material including polyethylene or polyvinyl chloride

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Control Statement: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4- 6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

USERS SHOULD: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If no such instructions for washables exist, use detergent and hot water.

ENVIRONMENTAL HAZARDS

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water by cleaning of equipment or disposal of equipment washwaters or rinsate.

Exposure to LANDMARK® XP Herbicide can injure or kill plants. Damage to susceptible plants can occur when soil particles are blown or washed off target onto cropland.

Groundwater Advisory

Sulfometuron-methyl and chlorsulfuron are known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of sulfometuron-methyl and chlorsulfuron from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

Non-Target Organism Advisory

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated area. Protect the forage and habitat of non-target organisms by minimizing spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label.

Windblown Soil Particles Advisory

Applications may not be made to soil that is subject to wind erosion when less than a 60% chance of rainfall is predicted to occur in the treatment area within 48 hours. Soils that are subject to wind erosion usually have a high silt and/or fine to very fine sand fractions. Soils with low organic matter also tend to be prone to wind erosion.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency in your State responsible for pesticide regulation.

Landmark® XP Herbicide must be used only in accordance with instructions on this label.

To the extent consistent with applicable law, BAYER CROPSCIENCE LP will not be responsible for losses or damages resulting from the use of this product in any manner not specified by BAYER CROPSCIENCE LP. To the extent consistent with applicable law, the user assumes all risks associated with such unspecified use.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

MANDATORY SPRAY DRIFT

Aerial Applications:

- **DO NOT** release spray at a height greater than 10 ft above the vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to use an extremely coarse or coarser droplet size (ASABE S572.1) for all applications.
- The boom length must not exceed 65% of the wingspan for airplanes or 75% of the rotor blade diameter for helicopters.
- Applicators must use ½ swath displacement upwind at the downwind edge of the field.
- Nozzles must be oriented so the spray is directed toward the back of the aircraft.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Ground Boom Applications:

- Apply with the nozzle height recommended by the manufacturer, but no more than 3 feet above the ground or target vegetation, unless making industrial turf or rangeland applications, in which case applicators may apply with a nozzle height no more than 4 feet above the crop or target vegetation.
- Applicators are required to use an extremely coarse or coarser droplet size (ASABE S572.1) for all applications.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

Boom-less Ground Applications:

- Applicators are required to use an extremely coarse or coarser droplet size (ASABE S572.1) for all applications.
- **DO NOT** apply when wind speeds exceed 10 miles per hour at the application site.
- **DO NOT** apply during temperature inversions.

SPRAY DRIFT ADVISORIES

Boom-less Ground Applications:

- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

Handheld Technology Applications:

- Take precautions to minimize spray drift.

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

Use the lowest boom height that is compatible with the spray nozzles that will provide uniform coverage. For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT - Aircraft

Higher release heights increase the potential for spray drift. When applying aerially to crops, **DO NOT** release spray at a height greater than 10 ft above the crop canopy, unless a greater application height is necessary for pilot safety.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

PRODUCT INFORMATION

Landmark® XP Herbicide is a dispersible granule that is mixed in water and applied as a spray.

Landmark® XP Herbicide controls many annual and perennial grasses and broadleaf weeds in non-crop sites. Landmark® XP

Herbicide may be used for general weed control on terrestrial non-crop sites and for selective weed control in certain types of unimproved turf grasses on these same sites. Landmark® XP Herbicide can be tank mixed with other herbicides registered for use in non-crop sites; when tank mixing, use the most restrictive limitations from the labeling of both products.

Landmark® XP Herbicide controls weeds by both preemergence and postemergence activity. The best results are obtained when the application is made at or before the early stages of weed growth; before weeds develop an established root system. Moisture is required to move Landmark® XP Herbicide into the root zone of weeds for preemergence control.

This product may be applied on terrestrial sites that contain areas of temporary surface water caused by collection of water in equipment ruts or in other depressions created by management activities. It is permissible to treat intermittently flooded low lying areas, seasonal dry flood plains, and transitional areas between upland and lowland areas when no water is present. It is also permissible to treat marshes, swamps, and bogs after water has receded, as well as seasonally dry flood deltas. **DO NOT** make applications to natural or man-made bodies of water including lakes, reservoirs, ponds, streams, and canals.

A drift control agent may be used at the manufacturer's listed rate in the application of Landmark® XP Herbicide.

Landmark® XP Herbicide is noncorrosive, nonflammable, nonvolatile, and does not freeze.

For best postemergence results, apply Landmark® XP Herbicide to young, actively growing weeds. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment
- soil pH, soil moisture, and soil organic matter

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

When applied as a spray, Landmark® XP Herbicide is absorbed by both the roots and foliage of plants, rapidly inhibiting the growth of susceptible weeds. When applied on dry fertilizer, Landmark® XP Herbicide is absorbed primarily by the roots. Two to three weeks after application to weeds, plant growth slows, and the growing points turn reddish-purple. Within 4 to 6 weeks of application, leaf veins and leaves become discolored, and the growing points subsequently die.

Warm, moist conditions following application accelerate the herbicidal activity of Landmark® XP Herbicide; cold, dry conditions delay the herbicidal activity. In addition, weeds hardened-off by drought stress are less susceptible to Landmark® XP Herbicide. Moisture is needed to move Landmark® XP Herbicide into the soil for preemergence weed control.

INVASIVE SPECIES MANAGEMENT

This product may be considered for use on public, private, and tribal lands to treat certain weed species infestations that have been determined to be invasive, consistent with the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) National Early Detection and Rapid Response (EDRR) System for invasive plants. Effective EDRR systems address invasions by eradicating the invader where possible and controlling them when the invasive species is too established to be feasibly eradicated. Once an EDRR assessment has been completed and action is recommended, a Rapid Response needs to be taken to quickly contain, deny reproduction, and if possible eliminate the invader. Consult your appropriate state extension service, forest service, or regional multidisciplinary invasive species management coordination team to determine the appropriate Rapid Response provisions and allowed treatments in your area.

WEED RESISTANCE MANAGEMENT

Landmark® XP Herbicide contains the active ingredients sulfometuron-methyl and chlorsulfuron which are a Group 2 Herbicide based on the mode of action classification system of the Weed Science Society of America. When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected.

Follow the best management practices listed below to delay the development of herbicide resistant weeds.

- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Suspected herbicide-resistant weeds may be identified by these indicators:
 - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
 - A spreading patch of non-controlled plants of a particular weed species; and
 - Surviving plants mixed with controlled individuals of the same species.

- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target weed.
- Report any incidence of non-performance of this product against a particular weed species to your Bayer distributor, Bayer representative or call 1-800-331-2867.
- If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- To the extent possible, **DO NOT** allow weed escapes to produce seeds, roots, or tubers.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weeds in the field.
- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program.
- **DO NOT** use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.

INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants, or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

PREPARING FOR USE - Site Specific Considerations

Understanding the risks associated with the application of Landmark® XP Herbicide is essential to aid in preventing off-site injury to desirable vegetation and agricultural crops. The risk of off-site movement both during and after application may be affected by a number of site specific factors including the nature, texture, and stability of the soil; the intensity and direction of prevailing winds; vegetative cover; site slope; rainfall; drainage patterns; and other local physical and environmental conditions. A careful evaluation of the potential for off-site movement from the intended application site, including movement of treated soil by wind or water erosion, must be made prior to using Landmark® XP Herbicide. This evaluation is particularly critical where desirable vegetation or crops are grown on neighboring land for which the use of Landmark® XP Herbicide is not labeled. If prevailing local conditions may be expected to result in off-site movement and cause damage to neighboring desirable vegetation or agricultural crops, **DO NOT** apply Landmark® XP Herbicide.

Before applying Landmark® XP Herbicide the user must read and understand all label directions, precautions, and restrictions completely, including these requirements for a site specific evaluation. If you **DO NOT** understand any of the instructions or precautions on the label or are unable to make a site specific evaluation yourself, consult your local agricultural dealer, cooperative extension service, land managers, professional consultants, or other qualified authorities familiar with the area to be treated. If you still have questions regarding the need for site specific considerations, please call 1-800-331-2867.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used produce agricultural plants on farms, forests, nurseries, or greenhouses. Use on noncrop sites and turf (unimproved) are not within the scope of the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas until sprays have dried.

NON-CROP SITES

APPLICATION INFORMATION

Landmark® XP Herbicide is labeled for weed control on private, public, and military lands as follows: nonagricultural areas (e.g. airports, highway, railroad and utility rights-of-way (ROW), sewage disposal areas); uncultivated agricultural areas--non-crop producing (e.g. farmyards, fuel storage areas, fence rows, barrier strips); industrial sites--outdoor (e.g. lumberyards, pipeline and tank farms).

Landmark® XP Herbicide is not labeled for use on recreation areas, sod farms, or for direct application to paved areas (surfaces).

Apply to non-agricultural areas by ground only, with the exception of rights-of-way, which may be treated by helicopter.

APPLICATION TIMING

Apply Landmark® XP Herbicide as a preemergence or early postemergence spray before or during the rainy season when weeds are actively germinating or growing.

APPLICATION RATES

Apply Landmark® XP Herbicide at 4.5 to 8.0 ounces (0.141 to 0.25 pounds sulfometuron-methyl and 0.070 to 0.125 pounds chlorsulfuron) of product per acre per year. When applied at lower rates, Landmark® XP Herbicide provides short-term control of weeds listed; when applied at higher rates, weed control is extended.

Note: Use the higher level of listed dosage ranges under the following conditions:

- heavy weed growth
- soils with high organic matter
- high soil moisture areas, e.g. along road edges or railroad shoulders

WEEDS CONTROLLED

Landmark® XP Herbicide effectively controls the following broadleaf weeds and grasses when applied at the rates shown. When applied at 4.5 ounces (0.141 pounds sulfometuron-methyl and 0.070 pounds chlorsulfuron) of product per acre, Landmark® XP Herbicide controls the following weeds:

BROADLEAF WEEDS	
Annual sowthistle	<i>Sonchus oleraceus</i>
Bedstraw	<i>Galium sp.</i>
Black medic	<i>Medicago lupulina</i>
Black mustard	<i>Brassica nigra</i>
Blue mustard	<i>Chorispora tenella</i>
Bouncingbet	<i>Saponaria officinalis</i>
Buckhorn plantain	<i>Plantago lanceolata</i>
Burclover	<i>Medicago sp.</i>
Buttercup	<i>Petasites hybridus</i>
Canada thistle	<i>Cirsium arvense</i>
Carolina geranium	<i>Geranium carolinianum</i>
Clover	<i>Trifolium sp.</i>
Cocklebur	<i>Xanthium sp.</i>
Common chickweed	<i>Stellaria media</i>
Common groundsel	<i>Senecio vulgaris</i>
Common lambsquarter	<i>Chenopodium album</i>
Common mallow	<i>Malva neglecta</i>
Common purslane	<i>Portulaca oleracea</i>
Common ragweed	<i>Ambrosia elatior</i>
Common speedwell	<i>Veronica officinalis</i>
Common spikeweed	<i>Hemizonia pungens</i>
Common sunflower	<i>Helianthus annuus</i>
Common tarweed	<i>Madia sp.</i>
Common vetch	<i>Vicia sativa</i>
Common yarrow	<i>Achillea millefolium</i>
Cow cockle	<i>Vaccaria pyramidata</i>
Crimson clover	<i>Trifolium incarnatum</i>
Curly dock	<i>Rumex crispus</i>

Cutleaf eveningprimrose	<i>Oenothera laciniata</i>
Dandelion	<i>Taraxacum officinale</i>
Dogfennel	<i>Eupatorium capillifolium</i>
Dyer's woad	<i>Isatis tinctoria</i>
Erect knotweed	<i>Polygonum erectum</i>
False chamomile	<i>Matricaria maritima</i>
Fiddleneck	<i>Amsinckia lycopsoides</i>
Field pennycress	<i>Thlaspi arvense</i>
Fireweed	<i>Epilobium angustifolium</i>
Fleabane	<i>Conyza sp.</i>
Flixweed	<i>Descurainia sophia</i>
Goldenrod	<i>Solidago sp.</i>
Hairy vetch	<i>Vicia villosa</i>
Hemp	<i>Cannabis sp.</i>
Hemp sesbania	<i>Sesbania exaltata</i>
Henbit	<i>Lamium amplexicaule</i>
Hill mustard	<i>Bunias orientalis</i>
Hoary cress (whitetop)	<i>Cardaria draba</i>
Houndstongue	<i>Cynoglossum officinale</i>
London rocket	<i>Sisymbrium irio</i>
Marestail/horseweed	<i>Conyza canadensis</i>
Musk thistle	<i>Carduus nutans</i>
Ox-eye daisy	<i>Chrysanthemum leucanthemum</i>
Pepperweed	<i>Lepidium sp.</i>
Perennial pepperweed	<i>Lepidium latifolium</i>
Prairie groundsel	<i>Senecio plattensis</i>
Prickly coontail	<i>Ceratophyllum echinatum</i>
Prickly sida	<i>Sida spinosa</i>
Prostrate knotweed	<i>Polygonum aviculare</i>
Puncturevine	<i>Tribulus terrestris</i>
Redroot pigweed	<i>Amaranthus retroflexus</i>
Redstem filaree	<i>Erodium cicutarium</i>
Salsify	<i>Tragopogon sp.</i>
Scotch thistle	<i>Onopordum acanthium</i>
Seaside heliotrope	<i>Heliotropium curassavicum</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Sicklepod	<i>Cassia obtusifolia</i>
Smallseed falseflax	<i>Camelina microcarpa</i>
Spanish needles	<i>Bidens bipinnata</i>
Spiny pigweed	<i>Amaranthus spinosus</i>
Spreading orach	<i>Atriplex patula</i>
Sweetclover	<i>Melilotus sp</i>
Tansymustard	<i>Descurainia pinnata</i>
Tansy ragwort	<i>Senecio jacobaea</i>

Tumble mustard (Jim Hill)	<i>Sisymbrium altissimum</i>
Tumble pigweed	<i>Amaranthus albus</i>
Turkey mullein	<i>Eremocarpus setigerus</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Whitestem filaree	<i>Erodium moschatum</i>
Whitetop	<i>Cardaria sp.</i>
Wild buckwheat	<i>Polygonum convolvulus</i>
Wild carrot	<i>Daucus carota</i>
Wild garlic	<i>Allium vineale</i>
Wild parsnip	<i>Pastinaca sativa</i>
Wild teasel	<i>Dipsacus fullonum</i>

* Certain biotypes of maretail are less sensitive to Landmark® XP Herbicide and may be controlled with a tank mixture of diuron and bromacil.

GRASSES (UP TO 6-12" TALL)	
Alta fescue	<i>Festuca arundinacea</i>
Annual bluegrass	<i>Poa annua</i>
Annual ryegrass	<i>Lolium sp.</i>
Bahiagrass	<i>Paspalum notatum</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Bulbous bluegrass	<i>Poa bulbosa</i>
Cheat	<i>Bromus secalinus</i>
Crabgrass	<i>Digitaria sp.</i>
Downy brome (cheatgrass)	<i>Bromus tectorum</i>
Foxtails (except green)	<i>Setaria sp.</i>
Foxtail barley	<i>Hordeum jubatum</i>
Foxtail fescue	<i>Vulpia myuros</i>
Italian ryegrass	<i>Lolium multiflorum</i>
Itchgrass	<i>Rottboellia cochinchinensis</i>
Jointed goatgrass	<i>Aegilops cylindrica</i>
Little barley	<i>Hordeum pusillum</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Red brome	<i>Bromus rubens</i>
Red fescue	<i>Festuca rubra</i>
Ripgut brome	<i>Bromus diandrus</i>
Rye (volunteer)	<i>Secale cereale</i>
Seashore saltgrass	<i>Distichlis spicata</i>
Signalgrass (broadleaf)	<i>Brachiaria platyphylla</i>
Sprangletop (annual)	<i>Leptochloa sp.</i>
Wheat (volunteer)	<i>Triticum aestivum</i>
Wild oats	<i>Avena fatua</i>
Witchgrass	<i>Panicum capillare</i>
Yellow indiagrass	<i>Sorghastrum nutans</i>

When applied at 8.0 ounces (0.25 pounds sulfometuron-methyl and 0.125 pounds chlorsulfuron) of product per acre, Landmark® XP Herbicide also controls the following additional weeds:

BROADLEAF WEEDS	
Aster	<i>Aster sp.</i>
Carpetweed	<i>Mollugo verticillata</i>
Catsear	<i>Hypocheris sp.</i>
Common cinquefoil	<i>Potentilla canadensis</i>
Common knapweed (black)	<i>Centaurea nigra</i>
Common mullein	<i>Verbascum thapsus</i>
Horsetail	<i>Equisetum sp</i>
Morningglory	<i>Ipomoea sp</i>
Russian knapweed	<i>Acroptilon repens</i>
St. Johnswort	<i>Hypericum perforatum</i>
White snakeroot	<i>Eupatorium rugosum</i>
Yellow rocket	<i>Barbarea vulgaris</i>
Yellow starthistle	<i>Centaurea solstitialis</i>

GRASSES	
Broadleaf panicum	<i>Panicum novemnerve</i>
Green foxtail	<i>Setaria viridis</i>
Johnsongrass	<i>Sorghum halepense</i>
Junglerice	<i>Echinochloa colonum</i>

SPECIFIC WEED PROBLEMS NON-CROP SITES

Kochia, Russian Thistle, and Prickly Lettuce

Since biotypes of kochia, Russian thistle, and prickly lettuce are known to be resistant to Landmark® XP Herbicide, tank mixture combinations with herbicides having different modes of action, including bromacil or diuron must be used. In areas where resistance is known to exist, these weeds must be treated postemergence with other herbicides registered for their control, including 2,4-D or dicamba.

Kochia and Russian Thistle - Apply a tank mixture of Landmark® XP Herbicide at 4.5 ounces (0.141 pounds sulfometuron-methyl and 0.070 pounds chlorsulfuron) per acre plus diuron.

DO NOT tank mix Landmark® XP Herbicide with HYVAR® X-L Herbicide, EPA Reg. No. 5481-634.

UNDER ASPHALT AND CONCRETE PAVEMENT

APPLICATION INFORMATION

Landmark® XP Herbicide may be used to control weeds under asphalt and concrete pavement, including that used in parking lots, highway shoulders, median strips, roadways, and airport runways and taxi ways, as well as cable barrier/guard rails on highways and radio/TV tower pads. Landmark® XP Herbicide may not control tubers, rhizomes, woody vegetation e.g. small trees, brush, or woody vines.

Landmark® XP Herbicide must only be used in an area that has been prepared according to good construction practices. Use sufficient water to ensure uniform coverage.

APPLICATION TIMING

Apply Landmark® XP Herbicide immediately before paving to avoid lateral movement of the herbicide as a result of soil movement due to weather or mechanical operations.

APPLICATION RATE

Apply Landmark® XP Herbicide at 8.0 ounces (0.25 pounds sulfometuron-methyl and 0.125 pounds chlorsulfuron) of product per acre.

RESTRICTIONS

UNDER ASPHALT AND CONCRETE

- **DO NOT** use Landmark® XP Herbicide under pavement in residential properties e.g. driveways, or in recreational areas, including jogging or bike paths, tennis courts, or golf cart paths.
- **DO NOT** apply more than 8.0 ounces (0.25 pounds sulfometuron-methyl and 0.125 pounds chlorsulfuron) of Landmark® XP Herbicide per acre per year for under asphalt and concrete pavement applications.
- **DO NOT** apply more than 8 ounces (0.25 pounds sulfometuron-methyl and 0.125 pounds chlorsulfuron) of Landmark® XP Herbicide per acre in a single application.
- **DO NOT** make more than one application per year of Landmark® XP Herbicide.
- **DO NOT** apply more than 0.375 pounds of the active ingredient sulfometuron-methyl per acre per year when using any combination of products containing sulfometuron-methyl.
- **DO NOT** apply more than 0.125 pounds of the active ingredient chlorsulfuron per acre per year when using any combination of products containing chlorsulfuron.
- **DO NOT** apply more than 0.281 pounds of the active ingredient sulfometuron-methyl per acre in a single application when using any combination of products containing sulfometuron-methyl.

INDUSTRIAL TURFGRASS

BERMUDAGRASS AND CENTIPEDEGRASS RELEASE

APPLICATION INFORMATION

Landmark® XP Herbicide may be used to control weeds in industrial turfgrass, roadsides, or other non-crop sites where the turfgrass is well established as a ground cover. Applications may temporarily suppress turfgrass growth and inhibit seedhead formation (chemical mowing).

APPLICATION TIMING AND RATE

Apply Landmark® XP Herbicide at 0.9 ounces (0.028 pounds sulfometuron-methyl and 0.014 pounds chlorsulfuron) of product per acre to established grasses after they have broken dormancy, usually 30 days after initial spring flush. If an additional application is necessary, apply Landmark® XP Herbicide again at 0.9 ounces (0.028 pounds sulfometuron-methyl and 0.014 pounds chlorsulfuron) of product per acre during late spring to early summer. On established weeds, apply Landmark® XP Herbicide one to two weeks after mowing for the best results.

Landmark® XP Herbicide may also be applied in late fall or early winter.

WEEDS CONTROLLED

When applied at 0.9 ounces (0.028 pounds sulfometuron-methyl and 0.014 pounds chlorsulfuron) of product per acre, Landmark® XP Herbicide controls the following weeds:

Annual bluegrass	<i>Poa annua</i>
Black mustard	<i>Brassica nigra</i>
Bulbous bluegrass	<i>Poa bulbosa</i>
Cheat	<i>Bromus secalinus</i>
Cocklebur	<i>Xanthium sp.</i>
Common chickweed	<i>Stellaria media</i>
Common lambsquarter	<i>Chenopodium album</i>
Common purslane	<i>Portulaca oleracea</i>
Common tarweed	<i>Madia sp.</i>
Common yarrow	<i>Achillea millefolium</i>
Dandelion	<i>Taraxacum officinale</i>
False chamomile	<i>Matricaria maritima</i>
Field pennycress	<i>Thlaspi arvense</i>
Fleabane	<i>Conyza sp.</i>
Flixweed	<i>Descurainia sophia</i>
Hill mustard	<i>Bunias orientalis</i>
Jointed goatgrass	<i>Aegilops cylindrica</i>
London rocket	<i>Sisymbrium irio</i>
Marestail/horseweed*	<i>Conyza canadensis</i>

Redroot pigweed	<i>Amaranthus retroflexus</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Smallseed falseflax	<i>Camelina microcarpa</i>
Tansymustard	<i>Descurainia pinnata</i>
Tumble mustard (Jim Hill)	<i>Sisymbrium altissimum</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Wheat (volunteer)	<i>Triticum aestivum</i>
Wild mustard	<i>Sinapis arvensis</i>
Wild oats	<i>Avena fatua</i>

RESTRICTIONS

INDUSTRIAL TURFGRASS

- **DO NOT** apply more than 0.9 ounces (0.028 pounds sulfometuron-methyl and 0.014 pounds chlorsulfuron) of Landmark® XP Herbicide per acre in a 12-month period.
- **DO NOT** apply more than 0.9 ounces (0.028 pounds sulfometuron-methyl and 0.014 pounds chlorsulfuron) per acre in a single application.
- **DO NOT** make more than two applications per year of Landmark® XP Herbicide when using reduced application rates. Allow at least 3 months between applications.
- **DO NOT** apply more than 0.375 pounds of the active ingredient sulfometuron-methyl per acre per year when using any combination of products containing sulfometuron-methyl.
- **DO NOT** apply more than 0.125 pounds of the active ingredient chlorsulfuron per acre per year when using any combination of products containing chlorsulfuron.
- **DO NOT** apply more than 0.281 pounds of the active ingredient sulfometuron-methyl per acre in a single application when using any combination of products containing sulfometuron-methyl.

PRECAUTIONS

- Excessive injury to turfgrass may result if a surfactant is used with Landmark® XP Herbicide applications made to actively growing turfgrass. The user assumes all responsibility for turfgrass injury if a surfactant is used with Landmark® XP Herbicide treatments applied to actively growing turfgrass.
- Landmark® XP Herbicide may temporarily discolor or cause top kill of turfgrass. Applications made while turfgrass is dormant may delay green-up in the spring.
- Landmark® XP Herbicide application on turfgrass that is under stress from drought, insects, disease, cold temperatures, or late spring frost may result in injury.
- Application of Landmark® XP Herbicide to turfgrass less than 1 year old may cause unacceptable turf injury.
- Annual retreatments may reduce turfgrass vigor.

NON-CROPLAND RESTORATION

APPLICATION INFORMATION

Landmark® XP Herbicide may be used to control downy brome (cheatgrass), cheat, jointed goatgrass, medusahead, and certain broadleaf weeds on non-agricultural sites to allow for the restoration of desirable perennial grass species.

Note: In order to reduce the potential for off-site movement of Landmark® XP Herbicide from wind or water related soil erosion, **DO NOT** burn, disk, or otherwise disturb treated sites between the time of application and reseeding or reestablishment of native grasses.

APPLICATION TIMING AND RATES

Apply Landmark® XP Herbicide at 0.75 to 2.25 ounces (0.023 to 0.070 pounds sulfometuron-methyl and 0.012 to 0.035 pounds chlorsulfuron) of product per acre in the fall, within 6 weeks before the expected date when the soil freezes, or in the Spring, within 6 weeks after the soil thaws. When applied at lower rates, Landmark® XP Herbicide provides short-term control of weeds listed; when applied at higher rates, weed control spectrum is broadened and extended.

When applied at 0.75 to 2.25 ounces (0.023 to 0.070 pounds sulfometuron-methyl and 0.012 to 0.035 pounds chlorsulfuron) of product per acre, Landmark® XP Herbicide controls the following weeds:

BROADLEAF WEEDS	
Blue mustard	<i>Chorispora tenella</i>
Common lambsquarter	<i>Chenopodium album</i>
Common purslane	<i>Portulaca oleracea</i>
Common tarweed	<i>Madia sp.</i>
Common yarrow	<i>Archillea millefolium</i>
False chamomile	<i>Matricaria maritima</i>
Field pennycress	<i>Thlaspi arvense</i>
Fleabane	<i>Conyza sp.</i>
Redroot pigweed	<i>Amaranthus retroflexus</i>
Smallseed falseflax	<i>Camelina microcarpa</i>
Tansymustard	<i>Descurainia pinnata</i>
Tumble mustard (Jim Hill)	<i>Sisymbrium altissimum</i>

GRASSES	
Bulbous bluegrass	<i>Poa bulbosa</i>
Cheat	<i>Bromus secalinus</i>
Downy brome (cheatgrass)	<i>Bromus tectorum</i>

When applied at 1.5 to 2.25 ounces (0.047 to 0.070 pounds sulfometuron-methyl and 0.023 to 0.035 pounds chlorsulfuron) of product per acre, Landmark® XP Herbicide controls the following additional weeds:

BROADLEAF WEEDS	
Annual sowthistle	<i>Sonchus oleraceus</i>
Buckhorn plantain	<i>Plantago lanceolata</i>
Buttercup	<i>Petasites hybridus</i>
Carolina geranium	<i>Geranium carolinianum</i>
Clover	<i>Trifolium sp.</i>
Cocklebur	<i>Xanthium sp</i>
Common chickweed	<i>Stellaria media</i>
Common groundsel	<i>Senecio vulgaris</i>
Common speedwell	<i>Veronica officinalis</i>
Common spikeweed	<i>Hemizonia pungens</i>
Common sunflower	<i>Helianthus annuus</i>
Cow cockle	<i>Vaccaria pyramidata</i>
Cutleaf eveningprimrose	<i>Oenothera laciniata</i>
Dandelion	<i>Taraxacum officinale</i>
Dyer's woad	<i>Isatis tinctoria</i>
Erect knotweed	<i>Polygonum erectum</i>
Fiddleneck	<i>Amsinckia lycopsoides</i>
Flixweed	<i>Descurainia sophia</i>
Goldenrod	<i>Solidago sp.</i>
Hairy vetch	<i>Vicia villosa</i>
Hemp sesbania	<i>Sesbania exaltata</i>
Henbit	<i>Lamium amplexicaule</i>
Hill mustard	<i>Bunias orientalis</i>

London rocket	<i>Sisymbrium irio</i>
Marestail/horseweed	<i>Conyza canadensis</i>
Morningglory	<i>Ipomoea sp.</i>
Musk thistle	<i>Carduus nutans</i>
Prickly coontail	<i>Ceratophyllum echinatum</i>
Prickly sida	<i>Sida spinosa</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Sicklepod	<i>Cassia obtusifolia</i>
Spiny pigweed	<i>Amaranthus spinosus</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Whitestem filaree	<i>Erodium moschatum</i>
Wild buckwheat	<i>Polygonum convolvulus</i>
Wild carrot	<i>Daucus carota</i>
Wild mustard	<i>Sinapis arvensis</i>
Wild teasel	<i>Dipsacus fullonum</i>

GRASSES	
Annual bluegrass	<i>Poa annua</i>
Annual ryegrass	<i>Lolium sp.</i>
Barnyardgrass	<i>Echinochloa crus-galli</i>
Foxtails (except green)Setaria sp	<i>Setaria sp</i>
Foxtail barley	<i>Hordeum jubatum</i>
Japanese brome	<i>Bromus japonicus</i>
Jointed goatgrass	<i>Aegilops cylindrical</i>
Little barley	<i>Hordeum pusillum</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Rye (volunteer)	<i>Secale cereale</i>
Signalgrass (broadleaf)	<i>Brachiaria platyphylla</i>
Wheat (volunteer)	<i>Triticum aestivum</i>
Wild oats	<i>Avena fatua</i>
Witchgrass	<i>Panicum capillare</i>

When applied at 2.25 ounces (0.07 pounds sulfometuron-methyl and 0.035 pounds chlorsulfuron) of product per acre, Landmark® XP Herbicide controls the following additional weeds:

BROADLEAF WEEDS	
Bedstraw	<i>Galium sp.</i>
Black mustard	<i>Brassica nigra</i>
Common vetch	<i>Vicia sativa</i>
Hemp	<i>Cannabis sp.</i>
Hoary cress (whitetop)	<i>Cardaria draba</i>
Pepperweed	<i>Lepidium sp.</i>
Prairie groundsel	<i>Senecio plattensis</i>
Salsify	<i>Tragopogon sp.</i>
Spanish needles	<i>Bidens bipinnata</i>
Spreading orach	<i>Atriplex patula</i>
Sweet clover	<i>Melilotus sp.</i>
Tansy ragwort	<i>Senecio jacobaea</i>
Tumble pigweed	<i>Amaranthus albus</i>
Wild garlic	<i>Allium vineale</i>

GRASSES	
Crabgrass	<i>Digitaria sp.</i>
Foxtail fescue	<i>Vulpia myuros</i>
Green foxtail	<i>Setaria viridis</i>
Red brome	<i>Bromus rubens</i>
Ripgut brome	<i>Bromus diandrus</i>

GRASS REPLANT INTERVALS

Following a treatment with Landmark® XP Herbicide at use rates up to 2.25 ounces (0.07 pounds sulfometuron-methyl and 0.035 pounds chlorsulfuron) of product per acre, the following grasses may be replanted at least 3 months after a spring application:

Green needlegrass	<i>Stipa viridula</i>
Meadow brome	<i>Bromus erectus</i>
Russian wild rye	<i>Elymus sp.</i>
Switchgrass	<i>Panicum virgatum</i>

The following grasses may be replanted at least 6 months after a spring application:

Alta fescue	<i>Festuca arundinacea</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Orchardgrass	<i>Dactylis glomerata</i>
Smooth brome	<i>Bromus inermis</i>
Sheep fescue	<i>Festuca ovina</i>
Western wheatgrass	<i>Agropyron smithii</i>

The intervals, 3 and 6 months, are for soils with a pH of less than 7.5 and only for applications made in the spring. Soils having a pH greater than 7.5 will require longer replant intervals.

Because Landmark® XP Herbicide degradation is slowed by cold or frozen soils, applications made in the fall must consider the intervals as beginning in the spring following treatment.

Testing has indicated that there is considerable variation in response among species and types of grasses when seeded into areas treated with Landmark® XP Herbicide. If species other than those listed above are to be planted into areas treated with Landmark® XP Herbicide either a field bioassay must be performed or previous experience may be used to determine the feasibility of replanting treated areas.

To conduct a field bioassay, grow to maturity test strips of the grass(es) you plan to grow the following year. The test strips must cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the grass(es) grown in the test strips.

ADDITIONAL RESTRICTIONS FOR NON-CROP USES

- **DO NOT** treat frozen soil.
- **DO NOT** use on lawns, walks, driveways, and tennis courts.
- **DO NOT** apply in or on irrigation ditches or canals including their outer banks.
- **DO NOT** apply through any type of irrigation system.
- **DO NOT** use this product in the following counties of Colorado: Saguache, Rio Grande, Alamosa, Costilla, and Conejos.
- If non-crop sites treated with Landmark® XP Herbicide are to be converted to a food, feed, or fiber agricultural crop, or to a horticultural crop, **DO NOT** plant the treated sites for at least one year after the Landmark® XP Herbicide application. A field bioassay must then be completed before planting to crops.
- **DO NOT** apply more than 8.0 ounces (0.25 pounds sulfometuron-methyl and 0.125 pounds chlorsulfuron) of Landmark® XP Herbicide per acre per year for non-crop sites.
- **DO NOT** apply more than 6 ounces (0.188 pounds sulfometuron-methyl and 0.094 pounds chlorsulfuron) of Landmark® XP Herbicide per acre in a single application.
- **DO NOT** apply more than six applications per year of Landmark® XP Herbicide when using reduced application rates. Allow at least 45 days between applications.
- **DO NOT** apply more than 2.25 ounces (0.07 lb ai/acre sulfometuron-methyl and 0.035 lb ai/acre chlorsulfuron) Landmark® XP Herbicide per acre per year for rangeland restoration use.
- **DO NOT** apply more than 0.375 pounds of the active ingredient sulfometuron-methyl per acre per year when using any combination of products containing sulfometuron-methyl.
- **DO NOT** apply more than 0.125 pounds of the active ingredient chlorsulfuron per acre per year when using any combination of products containing chlorsulfuron.
- **DO NOT** apply more than 0.281 pounds of the active ingredient sulfometuron-methyl per acre when using any combination of products containing sulfometuron-methyl in a single application for non-crop sites.
- **DO NOT** use on food or feed crops. **DO NOT** use on sod farms.
- **DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.
- **DO NOT** use on food or feed crops.
- **DO NOT** use on sod farms.
- Treatment of powdery, dry soil or light, sandy soil when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to susceptible crops when soil particles are moved by wind or water. Injury to crops may result if treated soil is washed, blown, or moved onto land used to produce crops. Exposure to Landmark® XP Herbicide may injure or kill most crops. Injury may be more severe when the crops are irrigated. **DO NOT** apply Landmark® XP Herbicide when these conditions are identified and powdery, dry soil or light or sandy soil are known to be prevalent in the area to be treated.
- If non-crop sites treated with Landmark® XP Herbicide are to be converted to a food, feed, or fiber agricultural crop, or to a horticultural crop, **DO NOT** plant the treated sites for at least one year after the Landmark® XP Herbicide application. A field bioassay must then be completed before planting to crops.

ADDITIONAL INSTRUCTIONS AND PRECAUTIONS FOR NON-CROP USES

- Injury to or loss of desirable species may occur if equipment is drained or flushed on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Applications made where runoff water flows onto agricultural land may injure crops. Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials including asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of Landmark® XP Herbicide.
- Leave treated soil undisturbed to reduce the potential for Landmark® XP Herbicide movement by soil erosion due

- to wind or water.
- Keep from contact with fertilizers, insecticides, fungicides, and seeds.

FIELD BIOASSAY

To conduct a field bioassay, grow to maturity test strips of the crop(s) you plan to grow the following year. The test strips must cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the crops(s) grown in the test strips. In the case of suspected offsite movement of Landmark® XP Herbicide to cropland, soil samples may be quantitatively analyzed for Landmark® XP Herbicide or any other herbicide which could be having an adverse effect on the crop, in addition to conducting the above-described bioassay.

TANK MIX COMBINATIONS

Combination with other herbicides broadens the spectrum of weeds controlled. In addition, total vegetation control can be achieved with higher rates of Landmark® XP Herbicide plus residual type companion herbicides. To improve postemergence control of weeds, add surfactant at 0.25% by volume or at the manufacturer's labeled rate based on spray area.

Landmark® XP Herbicide may be applied with the listed rates of other herbicides registered for this use. For application method and other use specifications, use the most restrictive directions for the intended combination. It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions and limitations and directions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

DO NOT tank mix Landmark® XP Herbicide with HYVAR® X-L Herbicide EPA Reg. No. 5481-634.

SPRAY EQUIPMENT

Low rates of Landmark® XP Herbicide can kill or severely injure most crops. Following a Landmark® XP Herbicide application, the use of spray equipment to apply other pesticides to crops on which Landmark® XP Herbicide or its active ingredients are not registered may result in their damage. The most effective way to reduce this crop damage potential is to use dedicated mixing and application equipment.

APPLICATION

Use a sufficient volume of water to ensure thorough coverage when applying Landmark® XP Herbicide as a broadcast or directed spray. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern. Be sure the sprayer is calibrated before use. Avoid overlapping and shut off spray booms while starting, turning, slowing, or stopping to avoid injury to desired species.

MIXING INSTRUCTIONS

1. Fill spray tank 1/2 full of water.
2. With the agitator running, add the proper amount of Landmark® XP Herbicide.
3. If using a companion product, add the directed amount.
4. For postemergent applications, add the proper amount of spray adjuvants.
5. Add the remaining water.
6. Agitate the spray tank thoroughly.

Landmark® XP Herbicide spray preparations are stable if they are pH neutral or alkaline and stored at or below 100° F.

SPRAYER CLEANUP

Thoroughly clean all mixing and spray equipment following applications of Landmark® XP Herbicide as follows:

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water.
2. Fill the tank with clean water and 1 gal of household ammonia (contains 3% active) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.

Equivalent amounts of an alternate-strength ammonia solution or a commercial cleaner can be used in the cleanout

procedure. If a commercial cleaner is used, carefully read and follow the individual cleaner instructions.

3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. Dispose of the rinsate on a labeled site or at an approved waste disposal facility. If a commercial cleaner is used follow the directions for rinsate disposal on the label.

Notes:

1. **Caution: DO NOT** use chlorine bleach with ammonia as dangerous gases will form. **DO NOT** clean equipment in an enclosed area.
2. Steam-clean aerial spray tanks before performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When Landmark® XP Herbicide is tank mixed with other pesticides, all required cleanout procedures must be examined and the most rigorous procedure followed.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, that it is configured properly, and that drift potential has been minimized.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Read the specific crop use and application equipment instructions to determine if an air assisted field crop sprayer can be used.

DRIFT CONTROL ADDITIVES

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution. Preferred drift control additives have been certified by the Chemical Producers and Distributors Association (CPDA).

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE: Store product in original container only.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING: Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable Container" or "Refillable Container" designation.

Nonrefillable Plastic and Metal Containers (Capacity Equal to or Less Than 50 Pounds): Nonrefillable container.

DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. **DO NOT** burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Plastic and Metal Containers (Capacity Greater Than 50 Pounds): Nonrefillable container. DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. **DO NOT** burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled, or Turned Upside Down): Nonrefillable container. DO NOT reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom, and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration, and/or spray volume. If the

manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour, or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Paper or Plastic Bags, Fiber Sacks including Flexible Intermediate Bulk Containers (FIBC), or Fiber Drums With Liners: Nonrefillable container. DO NOT reuse or refill this container. Completely empty paper or plastic bag, fiber sack, or drum liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer for recycling if available or dispose of empty paper or plastic bag, fiber sack, or fiber drum and liner in a sanitary landfill, or by incineration. **DO NOT** burn, unless allowed by state and local ordinances.

Refillable Fiber Drums With Liners: Refillable container (fiber drum only). Refilling Fiber Drum: Refill this fiber drum with Landmark® XP Herbicide containing sulfometuron-methyl and chlorsulfuron only. **DO NOT** reuse this fiber drum for any other purpose. Cleaning before refilling is the responsibility of the refiller. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment.

Disposing of Fiber Drum and/or Liner: DO NOT reuse this fiber drum for any other purpose other than refilling (see preceding). Cleaning the container (liner and/or fiber drum) before final disposal is the responsibility of the person disposing of the container. Offer the liner for recycling if available or dispose of liner in a sanitary landfill, or by incineration. **DO NOT** burn, unless allowed by state and local ordinances. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner. To clean the fiber drum before final disposal, completely empty the fiber drum by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer the fiber drum for recycling if available or dispose of in a sanitary landfill, or by incineration. **DO NOT** burn, unless allowed by state and local ordinances.

All Other Refillable Containers: Refillable container. Refilling Container: Refill this container with Landmark® XP Herbicide containing sulfometuron-methyl and chlorsulfuron only. **DO NOT** reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. If damage is found, **DO NOT** use the container, contact BAYER CROPS SCIENCE LP at the number below for instructions. Check for leaks after refilling and before transporting. If leaks are found, do not reuse or transport container, contact BAYER CROPS SCIENCE LP at the number below for instructions. **Disposing of Container: DO NOT** reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom, and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration, and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour, or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. **DO NOT** burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Outer Pouches of Water Soluble Packets (WSP): Nonrefillable container. DO NOT reuse or refill this container. Offer for recycling if available or dispose of the empty outer foil pouch in the trash as long as WSP as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously.

DO NOT transport if this container is damaged or leaking. If the container is damaged, leaking, or obsolete, or in the event of a major spill, fire, or other emergency, contact BAYER CROPS SCIENCE LP at 1-800-334-7577, day or night.

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CONDITIONS OF SALE AND LIMITATIONS OF WARRANTY AND LIABILITY

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, plant injury, other property damage, as well as other unintended consequences may result because of factors beyond the control of Bayer CropScience LP. Those factors include, but are not limited to, weather conditions, presence of other materials or the manner of use or application. All such risks shall be assumed by the user or buyer.

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Landmark XP Herbicide (Pending) 10/16/2017, 10/27/2017, 11/6/2017, 04/04/2018, 07/27/2018, 09/05/2018, 09/26/2018, 12/11/2018, 03/20/2019, 03/21/2019, 05/28/2019, 10/04/2019, 10/24/2019